

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

sectioning semiconductor elements from a semiconductor wafer which has
an element region formed on its front surface to provide at least first and second
semiconductor elements having a thickness of 20 μm or more and 100 μm or less, while
keeping the sectioned first and second semiconductor elements in a state held by a
holding member;

picking up the sectioned first and second semiconductor elements from
the holding member by holding them with an adsorption collet in order of their
sectioning;

cutting an element adhesive film held by a porous adsorption member
according to the shape of one of the semiconductor elements to form a sectioned
element adhesive film,

placing the picked-up first and second semiconductor elements held by
the adsorption collet on the sectioned element adhesive film held by the porous
adsorption member in order of their sectioning;

sticking the sectioned element adhesive film held by the porous adsorption
member to each of the back surfaces of the first and second semiconductor elements
held by the adsorption collet by pressing the sectioned element adhesive film held by

the porous adsorption member against the first and second semiconductor elements held by the adsorption collet in order of their sectioning;

 sending the first and second semiconductor elements stuck to the sectioned element adhesive film above a semiconductor device forming base material in order of their sectioning;

 adhering the first semiconductor element to the semiconductor device forming base material by the element adhesive film; and

 adhering the second semiconductor element on the first semiconductor element by the element adhesive film.

2. (Original) The method of manufacturing a semiconductor device according to claim 1,

 wherein the semiconductor element sectioning process has a process of sticking the holding member to the back surface of the semiconductor wafer and cutting the semiconductor wafer to form the sectioned semiconductor elements while keeping them in a state being held by the holding member.

3. (Original) The method of manufacturing a semiconductor device according to claim 1,

 wherein the semiconductor element sectioning process has a process of forming modified layers or grooves, which are deeper than the thickness of the semiconductor element, from the front surface of the semiconductor wafer, a process of

sticking a first holding member to the front surface of the semiconductor wafer, grinding and polishing the back surface of the semiconductor wafer and sectioning the semiconductor elements while keeping them in a state being held by the first holding member, and a process of sticking a second holding member to the back surfaces of the semiconductor elements and separating the first holding member.

4. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1,

wherein the element adhesive film cutting process has a process of cutting the element adhesive film supplied from a supply roll by mechanical cutting or laser cutting.

5. (Cancelled)

6. (Currently Amended) A manufacturing apparatus of a semiconductor device, comprising:

a pickup section for picking up sectioned first and second semiconductor elements having a thickness of 20 µm or more and 100 µm or less by holding them with an adsorption collet in order of their sectioning from a semiconductor wafer which has sectioned semiconductor elements being held by a holding member;

a film cutting section for cutting an element adhesive film held by a porous adsorption member according to the shape of one of the semiconductor elements to form a sectioned element adhesive film,

a first moving section for moving the picked-up first and second semiconductor elements held by the adsorption collet on the sectioned element adhesive film held by the porous adsorption member in order of their sectioning;

a film sticking section for sticking the sectioned element adhesive film held by the porous adsorption member to each of the back surfaces of the first and second semiconductor elements held by the adsorption collet by pressing the sectioned element adhesive film held by the porous adsorption member against the first and second semiconductor elements held by the adsorption collet in order of their sectioning;

a second moving section for moving the first and second semiconductor elements stuck to the sectioned element adhesive film above a semiconductor device forming base material in order of their sectioning; and

an element adhesion section for adhering the first semiconductor element to the semiconductor device forming base material by the element adhesive film and adhering the second semiconductor element on the first semiconductor element by the element adhesive film.

7. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the film cutting section has a cutting mechanism for cutting the element adhesive film supplied from a supply roll by mechanical cutting or laser cutting.

8. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the film cutting section has a cutting mechanism for cutting the element adhesive film held by the porous adsorption member by stamping it.

9. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 8,

wherein the porous adsorption member is made of a porous metal.

10. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the film cutting section has a laser cutting mechanism for cutting the element adhesive film held by the porous adsorption member and a moving mechanism for moving the laser cutting mechanism or the porous adsorption member according to the shape of the semiconductor element.

11. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 10,

wherein the porous adsorption member is made of a porous metal.

12. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the pickup section has a push-up mechanism for separating the semiconductor element held by the adsorption collet from the holding member by pushing up the back surface of the semiconductor element.

13. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the adsorption collet is made of a porous metal.

14. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the film sticking section has a film separation section for separating a protective film, which is disposed on the back surface of the element adhesive film stuck to the semiconductor element.

15. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1,

wherein the second semiconductor element is stacked on the first semiconductor element such that the second semiconductor element protrudes from the outside shape of the first semiconductor element.

16. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the second semiconductor element is stacked on the first semiconductor element such that the second semiconductor element protrudes from the outside shape of the first semiconductor element.

17. (Previously Presented) The method of manufacturing a semiconductor device according to claim 1,

wherein the adsorption collet holds a whole surface of the sectioned first and second semiconductor elements, and the porous adsorption member holds a whole surface of the sectioned element adhesive film.

18. (Previously Presented) The manufacturing apparatus of a semiconductor device according to claim 6,

wherein the adsorption collet holds a whole surface of the sectioned first and second semiconductor elements, and the porous adsorption member holds a whole surface of the sectioned element adhesive film.